

DEPMEDS LABORATORY PROCEDURES
DEPARTMENT OF CLINICAL SUPPORT SERVICES
U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL
FORT SAM HOUSTON, TEXAS 78234-6137

MCCS-HCL STANDING OPERATING PROCEDURE 01 November 01

WRIGHT'S STAIN BY CAMCO QUICK STAIN

1. PRINCIPLE:

A drop of blood is spread on a slide; it is then stained and examined. A well made and stained blood smear provides valuable information concerning infections and other disease processes.

2. SPECIMEN: Whole blood from a capillary puncture or EDTA tube (at least 3/4 full).

3. REAGENTS AND EQUIPMENT:

- a. Glass slides.
- b. Camco quick stain: Store at 15-30°C.

NOTE Contains methyl alcohol. Fire hazard. Causes irritation. May be fatal or cause blindness if swallowed. Recommend use of personal protective equipment, and use of vent.

- c. Microhematocrit tubes.
- d. Staining rack.
- e. Timer (60 minutes).
- f. Microscope.
- g. Distilled Water: Reagent grade water.

4. QUALITY CONTROL:

- a. Run test slides to establish staining and rinse times.
- b. Examples of properly made and stained differential slides should be available for comparison.

MCCS-HCL

SUBJECT: SOP FOR WRIGHT'S STAIN BY CAMCO QUICK STAIN

5. PROCEDURE:

a. Procedure for making blood smears.

- (1) Place a slide on a flat table top and clean it.
- (2) Use a plain hematocrit tube and 2 cleaned slides. Place a small drop of blood centered about 1/4 inch from the end of the slide.
- (3) Hold a second (spreader) slide at a 30° angle on the first slide.
- (4) Draw the spreader slide back towards the drop of blood until spreader slide comes in contact with the drop of blood.
- (5) Push the spreader slide rapidly over the entire length of the first slide.
- (6) Let the smear air dry.
- (7) Use a lead pencil to label slide with patient identification.

b. Procedure for staining blood smears (Camco quick stain).

- (1) Place the air dried blood smears on a level staining rack, with the smear side up.
- (2) Flood the slides with Wright's stain, and time for 5 to 10 seconds.
- (3) Rinse the slide thoroughly with distilled water for 15 to 20 seconds.
- (4) Stand slides on end and allow to air dry.

6. RESULTS:

On a properly stained slide, the RBCs should appear buff pink to orange and WBCs should have a blue nucleus with a lighter staining cytoplasm.

7. PROCEDURAL NOTES:

- a. A clean slide should be free of oil and dust. To clean, use an alcohol prep and wipe the slide clean or place slide in a coplin jar with isopropyl alcohol and remove and

MCCS-HCL

SUBJECT: SOP FOR WRIGHT'S STAIN BY CAMCO QUICK STAIN

wipe clean as needed. Ensure all alcohol is dried from the slide before making the smear.

- b. The drop of blood ($1/8$ to $3/16$ inch in diameter) should be placed in the middle of the slide, approximately one cm from the end of the slide.
- c. To make the smear: With the thumb and index finger of the left hand, hold the two left corners of the smear slide. With the right hand, hold the spreader slide with the thumb on the edge of one side and the other four fingers on the edge of the other side. Place the end of the spreader slide slightly in front of the drop of blood on the other slide. Be careful that no blood gets in front of the spreader slide. Keep the spreader slide at a 30° angle and the edge of the spreader slide firmly against the horizontal slide. Then with a smooth motion push the spreader slide forward across the slide.
- d. The blood smear should always have a thin portion, a thick portion and a feathered area. If one or more of these components are missing, remake the blood smear.
- e. If stain has not been used or has set, precipitate may form; filter before use.
- f. For darker stained leukocytes: Dip the slide in distilled water for 1 minute or more after staining.
- g. To conserve stain, stain may be placed in coplin jar and the slide dipped into the stain. The stain must be monitored for precipitate and altered staining times due to evaporation.

8. REFERENCES:

- a. Brown, B.A., Hematology: Principles and Procedures. 6th ed., Philadelphia: Lea and Febiger, 1993.